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ISO/IEC 15288:2002

Australian/New Zealand Standard™

Systems engineering—System life cycle processes

Standards Australia

STANDARDS NEW ZEALAND
Paerewa Aotearoa

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee IT-015, Software Engineering. It was approved on behalf of the Council of Standards Australia on 31 December 2002 and on behalf of the Council of Standards New Zealand on 13 December 2002. It was published on 3 March 2003.

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We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia International or Standards New Zealand at the address shown on the back cover.

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee IT-015, Software Engineering. This Standard is identical with, and has been reproduced from ISO/IEC 15288:2002, *Systems engineering—System life cycle processes*.

The objective of this Standard is to establish a common framework for describing the life cycle of systems created by humans and a set of well-defined processes and associated terminology. Selected sets of these processes may be applied throughout the life cycle for managing and performing the stages of a system's life cycle. This is accomplished through the involvement of all interested parties with the ultimate goal of achieving customer satisfaction.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the annex to which they apply. A 'normative' annex is an integral part of a Standard, whereas an 'informative' annex is only for information and guidance.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'this International Standard' should read 'this Australian/New Zealand Standard'.

(c) A full point should be substituted for a comma when referring to a decimal marker.

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INTRODUCTION

The complexity of man-made systems has increased to an unprecedented level. This has led to new opportunities, but also to increased challenges for the organizations that create and utilize systems. These challenges exist throughout the life cycle of a system and at all levels of structural detail. They arise from several sources:

— there are inherent differences among the hardware, software and human elements from which systems are constructed.

— almost every present-day system contains, and/or is modelled and supported by computer-based technology.

— there is a lack of harmonization and integration of the involved disciplines, including science, engineering, management and finance.

There is therefore a need for a common framework to improve communication and co-operation among the parties that create, utilize and manage modern systems in order that they can work in an integrated, coherent fashion.

This International Standard provides a common process framework covering the life cycle of man-made systems. This life cycle spans the conception of ideas through to the retirement of a system. It provides the processes for acquiring and supplying systems. In addition, this framework provides for the assessment and improvement of the life cycle processes.

The processes in this International Standard form a comprehensive set from which an organization can construct system life cycle models appropriate to its products and services. An organization, depending on its purpose, can select and apply an appropriate subset to fulfil that purpose.

This International Standard can be used in one or more of the following modes:

— By an organization — to help establish an environment of desired processes. These processes can be supported by an infrastructure of methods, procedures, techniques, tools and trained personnel. The organization may then employ this environment to perform and manage its projects and progress systems through their life cycle stages. In this mode this International Standard is used to assess conformance of a declared, established environment to its provisions.

— By a project — to help select, structure and employ the elements of an established environment to provide products and services. In this mode this International Standard is used in the assessment of conformance of the project to the declared and established environment.

— By an acquirer and a supplier — to help develop an agreement concerning processes and activities. Via the agreement, the processes and activities in this International Standard are selected, negotiated, agreed to and performed. In this mode this International Standard is used for guidance in developing the agreement.

This International Standard contains requirements in three Clauses: Clause 5, that defines the requirements for the system life cycle processes, Clause 6, that defines the requirements for stages in a life cycle, and Annex A, that provides requirements for tailoring of this International Standard. Three informative annexes are also contained in this International Standard: Annex B, that provides an example of the use of stages in life cycles, Annex C, that shows its relationship with ISO/IEC 12207:1995/AMD.1:2002 Information technology — Software life cycle processes, and Annex D, that describes the key concepts that it uses. Readers new to this International Standard are advised to consult Annex D to gain an appreciation of these concepts.

NOTES

AUSTRALIAN/NEW ZEALAND STANDARD

Systems engineering — System life cycle processes

1 Scope

1.1 Purpose

This International Standard establishes a common framework for describing the life cycle of systems created by humans. It defines a set of processes and associated terminology. These processes can be applied at any level in the hierarchy of a system's structure. Selected sets of these processes can be applied throughout the life cycle for managing and performing the stages of a system's life cycle. This is accomplished through the involvement of all interested parties with the ultimate goal of achieving customer satisfaction.

This International Standard also provides processes that support the definition, control and improvement of the life cycle processes used within an organization or a project. Organizations and projects can use these life cycle processes when acquiring and supplying systems.

This International Standard concerns those systems that are man-made and may be configured with one or more of the following: hardware, software, humans, processes (e.g. review process), procedures (e.g. operator instructions), facilities and naturally occurring entities (e.g. water, organisms, minerals).

1.2 Field Of Application

This International Standard applies to the full life cycle of systems, including conception, development, production, utilization, support and retirement of systems, and to the acquisition and supply of systems, whether performed internally or externally to an organization. The life cycle processes of this International Standard can be applied concurrently, iteratively and recursively to a system and its elements.

There is a wide variety of systems in terms of their purpose, domain of application, complexity, size, novelty, adaptability, quantities, locations, life spans and evolution. This International Standard describes the processes that comprise the life cycle of any man-made system. It therefore applies to one-of-a-kind systems, mass-produced systems and customized, adaptable systems.

This International Standard applies to organizations in their role as both acquirers and suppliers. It can be used by a single party in a self-imposed mode or in a multi-party situation. Parties can be from the same organization or from different organizations and the situation can range from an informal agreement to a formal contract.

The processes in this International Standard can be used as a basis for establishing business environments, e.g. methods, techniques, tools and trained personnel. It provides a process reference model characterized in terms of the process purpose and the process outcomes that result from their successful implementation. This International Standard can therefore be used as a reference model to support process assessment as specified in ISO/IEC TR 15504-2.

1.3 Limitations

This International Standard does not detail the life cycle processes in terms of methods or procedures required to meet the requirements and outcomes of a process.

This International Standard does not detail documentation in terms of name, format, explicit content and recording media.